

Appl. No. 10/709,175
Docket No. 146442/GIM-0120

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This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (original) An electronic assembly comprising:
a first layer having a first interface surface and a plurality of cavities formed in the first interface surface;
a second layer having a second interface surface and a plurality of projections disposed at the second interface surface, wherein the plurality of projections are aligned with and disposed at the plurality of cavities; and
an electrically conductive connecting material disposed at the plurality of cavities such that the connecting material connects the plurality of projections to the respective plurality of cavities.
2. (original) The assembly of Claim 1, wherein:
the plurality of cavities are formed having a depth d in the first interface surface;
the first interface surface is disposed apart from the second interface surface by a gap g ; and
the plurality of projections have a length h that is equal to or less than the sum of the depth d and the gap g .
3. (original) The assembly of Claim 1, wherein:
the plurality of projections have a width w equal to or greater than about 100 microns and equal to or less than about 700 microns.

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4. (original) The assembly of Claim 3, wherein:
the plurality of projections have a width w equal to about 500 microns.
5. (original) The assembly of Claim 3, wherein:
the pitch of the plurality of projections is equal to or greater than about 1.1 times
the width w and equal to or less than about 3 times the width w .
6. (original) The assembly of Claim 5, wherein:
the pitch of the plurality of projections is equal to about 2 times the width w .
7. (original) The assembly of Claim 1, wherein:
the plurality of projections are shaped to mirror the shape of the plurality of
cavities.
8. (original) The assembly of Claim 1, wherein:
the first layer comprises a ceramic substrate;
the second layer comprises a diode array having a plurality of backlit photodiodes
in electrical communication with the plurality of projections; and
the connecting material comprises a conductive epoxy, a conductive solder, or any
combination comprising at least one of the foregoing materials.
9. (original) The assembly of Claim 1, wherein:
the connecting material is constrained by the perimeter of each of the plurality of
cavities at the first interface surface.
10. (original) The assembly of Claim 9, wherein adjacent projections are absent
direct electrical communication.

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11. (original) The assembly of Claim 8, wherein:

the assembly comprises a light detector for use in medical diagnostic equipment.

12. (original) The assembly of Claim 8, wherein:

the plurality of photodiodes are spaced on the first layer with an edge spacing equal to or less than about 100 micrometers.

13. (original) The assembly of Claim 12, wherein:

the plurality of photodiodes are spaced on the first layer with an edge spacing equal to or less than about 25 micrometers.

14. (original) The assembly of Claim 13, wherein:

the plurality of photodiodes are spaced on the first layer with an edge spacing equal to about 10 micrometers.

15-34. (canceled)

35. (new) An electronic assembly comprising:

a first layer having a plurality of cavities;

a second layer having a plurality of projections, wherein the plurality of projections are aligned with and disposed at the plurality of cavities; and

an electrically conductive connecting material disposed at the plurality of cavities such that the plurality of projections are electrically bonded to the respective plurality of cavities via the electrically conductive connecting material.